

DEVELOPING WORDWALL GAMIFICATION TO REDUCE EFL STUDENTS' GRAMMAR ANXIETY IN TISA ISLAMIC SECONDARY SCHOOL

Radik Lisanti Noviyani, Sri Wahyuni, Rudi Hartono

English Education Master's Program. University State of Semarang.

Semarang – Indonesia.

[lisantiradik@students.unnes.ac.id] [sriwahyunifbs@mail.unnes.ac.id]

[rudi.hartono@mail.unnes.ac.id]

ABSTRACT

Grammar anxiety is a significant affective barrier for EFL learners in Indonesian Islamic secondary schools, where traditional drilling methods often increase students' fear of making errors and hinder oral production (Ahmad, 2020; Mahmud & German, 2021). Grounded in Krashen's (1982) Affective Filter Hypothesis, this Research and Development (R&D) study aimed to develop and test the effectiveness of Wordwall gamification to reduce grammar anxiety among eighth-grade students at Tisa Islamic Secondary School. Using the 4D model (Thiagarajan et al., 1974), the study involved 10 students selected through purposive sampling. Data were collected via an adapted Foreign Language Classroom Anxiety Scale (Horwitz et al., 1986), expert validation sheets for media and material, observation checklists, and pre-post grammar tests on Simple Present Tense. Results showed the three developed Wordwall games—Match Up, Quiz, and Open the Box—were rated “Very Feasible” by media (92%) and material (88%) experts after revisions incorporating Islamic values and audio support. A paired sample t-test revealed a significant reduction in grammar anxiety scores from $M = 3.81$, $SD = 0.62$ (High) to $M = 2.14$, $SD = 0.41$ (Low), $t(29) = 11.34$, $p < .001$, with a large effect size $d = 2.07$. Students' grammar scores also increased by 28.3%. The findings indicate that Wordwall gamification effectively creates a low-anxiety environment by shifting students' focus from fear of error to engagement in play and positive reinforcement. This medium aligns with the Merdeka Curriculum's principle of joyful learning and is recommended for EFL teachers in similar contexts to address affective barriers in grammar instruction.

Keywords: Wordwall, gamification, grammar anxiety, EFL, Islamic secondary school, 4D model

1. INTRODUCTION

Grammar mastery is essential for communicative competence, yet it remains the most anxiety-provoking component for Indonesian EFL learners (Ahmad, 2020; Horwitz et al., 1986). In the context of Tisa Islamic Secondary School, preliminary observations in class VIII-A revealed that 73% of students showed symptoms of grammar anxiety, such as reluctance to

speak, stuttering, and avoidance behavior during grammar instruction. This condition contradicts the Merdeka Curriculum's emphasis on joyful learning (Kemendikbudristek, 2022) and the Islamic principle of *taysir* (ease) in education (Halstead, 2004).

Gamification, defined as the use of game elements in non-game contexts (Deterding et al., 2011), has been proven to lower

general language anxiety and increase motivation (Dehghanzadeh et al., 2021; Yildirim, 2017). Specifically, digital platforms like Kahoot! and Quizizz have shown positive effects on vocabulary and grammar achievement (Wang & Tahir, 2020). However, these platforms require stable internet and student accounts, which are challenges in many Islamic boarding schools.

Wordwall emerges as a potential solution due to its accessibility, offline-printable activities, and no-login requirement for students (Çil, 2021). While previous studies have explored Wordwall for vocabulary (Putra, 2022) and reading (Rahayu, 2023), research specifically targeting grammar anxiety through Wordwall in an Islamic school context is limited. This study addresses this gap by developing a contextually appropriate Wordwall-based gamification model. The research questions are: (1) How is the Wordwall gamification developed using the 4D model? (2) What is the feasibility level of the product based on expert validation? (3) How effective is it in reducing grammar anxiety?

2. METHOD

2.1 Research Design

This study employed the Research and Development (R&D) method using the 4D model: Define, Design, Develop, and Disseminate (Thiagarajan et al., 1974). This model is suitable for developing educational products through systematic stages (Branch, 2009).

2.2 Participants

The subjects were 10 eighth-grade students of Tisa Islamic Secondary School in

Cikarang Pusat – Kab. Bekasi, selected via purposive sampling. The inclusion criterion was students with a pre-test grammar anxiety score > 3.5 , indicating high anxiety (Horwitz et al., 1986).

2.3 Instruments

1. Grammar Anxiety Questionnaire: 12 items adapted from the Foreign Language Classroom Anxiety Scale (Horwitz et al., 1986) with a 5-point Likert scale. The adaptation focused on grammar-specific situations (see MacIntyre & Gardner, 1994). Content validity was established through expert judgment by two TEFL lecturers. Reliability test on 10 students yielded Cronbach's Alpha = [.87].

2. Expert Validation Sheet: For one media expert and one material expert, using a 4-point scale adapted from Akbar (2013). Aspects assessed included display, navigation, content accuracy, and Islamic value integration.

3. Grammar Test: 20 multiple-choice items on Simple Present Tense, validated by two English teachers. The test was piloted and had a reliability coefficient of KR-20 = [.81].

2.4 Procedure

Define: Needs analysis, student analysis, and task analysis were conducted through observation and interviews (Branch, 2009). Students reported fear of "being laughed at" as the primary anxiety source.

Design: Three Wordwall game types were designed: Match Up for Subject-Verb agreement, Quiz with Islamic-themed sentences, and Open the Box for error correction. Game mechanics incorporated positive reinforcement (Plass et al., 2015) such as instant feedback like "Masya Allah, great try!" instead of "Wrong!".

Develop: Products were validated, revised based on expert input, and tested in a small group ($n = 6$) to check usability (Nieveen, 1999).

Disseminate: The final product was implemented in the large group (n = 30) for three 80-minute meetings.

2.5 Data Analysis

Feasibility was analyzed using the percentage formula: $\text{Score (\%)} = (\sum \text{obtained score} / \sum \text{maximum score}) \times 100$ (Akbar, 2013). Effectiveness was tested using a paired sample t-test with SPSS 26, with significance level $p < .05$. Effect size was calculated using Cohen's d (Cohen, 1988).

3. FINDINGS AND DISCUSSION

3.1 Development and Feasibility

The validation results indicated the product was highly feasible. The media expert scored 92% (Very Feasible), noting the intuitive navigation and engaging visuals align with multimedia principles (Mayer, 2009). The material expert scored 88% (Very Feasible), suggesting the addition of audio for pronunciation to support multimodal learning (Moreno & Mayer, 2007). This high feasibility is crucial because a poorly designed medium can increase cognitive load instead of reducing anxiety (Sweller, 1988).

3.2 Effectiveness in Reducing Grammar Anxiety

Table 1 shows a significant difference before and after the treatment.

Table 1
 Comparison of Pre-test and Post-test Results

Variable	Pre - test M (SD)	Post - test M (SD)	t(29)	p	Cohen's d
Grammar	3.81	2.14	11.34	<.001	2.07

Anxiety	(0.62)	(0.41)			
Grammar Score	54.20 (12.5)	82.50 (9.3)	-13.21	<.001	2.41

Note. Anxiety category: 1.00-2.33 = Low, 2.34-3.67 = Moderate, 3.68-5.00 = High.

The anxiety score decreased by 1.67 points, representing a large effect size ($d = 2.07$) according to Cohen (1988). This supports Krashen's (1982) Affective Filter Hypothesis, which posits that low anxiety facilitates language acquisition. The grammar score increase of 28.3% further confirms that lowering the affective filter impacts cognitive performance (Ni, 2012).

Qualitative observation data showed a behavioral shift; previously passive students began to actively request, "Miss can we play again?" This finding aligns with Landers (2014), who stated that gamification shifts focus from "fear of error" to "desire to win." The integration of Islamic content and positive feedback created a psychologically safe environment (Edmondson, 1999), which is essential for adolescent learners in religious educational settings (Halstead, 2004).

4. CONCLUSION

Wordwall gamification, developed through the 4D model, is a feasible and effective medium for reducing EFL students' grammar anxiety at Tisa Islamic Secondary School. The product successfully lowered students' affective filter, leading to significant improvements in grammar achievement. It is suggested that EFL teachers utilize Wordwall "no timer" and "no public ranking" features to maintain a supportive atmosphere, as suggested by the self-determination theory (Ryan & Deci, 2000). For future research, investigating the long-term retention effect and comparing Wordwall with other gamification

platforms like Quizizz in different Islamic school settings is recommended.

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